Textbook Alignment to the Utah Core – Geometry

This alignment has been completed using an "Independent Alignment Vendor" from the USOE approved list (www.schools.utah.gov/curr/imc/indvendor.html.) Yes _x_ No _____

Name of Company and Individual Conducting Alignment:
_____Jim Birath_____

A "Credential Sheet" has been completed on the above company/evaluator and is (Please check one of the following):

X On record with the USOE.

☐ The "Credential Sheet" is attached to this alignment.

Instructional Materials Evaluation Criteria (name and grade of the core document used to align): Geometry Core Curriculum

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Title: ___*Geometry: Concepts and Applications* © 2008_____ **ISBN#:** __0-07-879914-7_____

Publisher: _Glencoe/McGraw-Hill_____

Overall percentage of coverage in the *Student Edition (SE) and Teacher Edition (TE)* of the Utah State Core Curriculum: _____%

Overall percentage of coverage in *ancillary materials* of the Utah Core Curriculum: _____%

STANDARD I: Students will use algebraic, spatial, and logical reasoning to solve geometry problems.

Percentage of coverage in the *student and teacher edition* for Standard I:_____ %	**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard I: _____%**		
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries*** ✓
Objective 1.1: Use inductive and deductive reasoning to develop mathematical arguments.			
a. Write conditional statements, converses, and inverses, and determine the truth value of these statements.	**Student Edition:** 24-28, 40 #34, 632-639 **Teacher Wraparound Edition:** EC 28, 637; ICE 25, 634; OEA 637; RA 635		
b. Formulate conjectures using inductive reasoning.	**Student Edition:** 4-9, 22 #38, 638-643 *Graphing Calculator Exploration* 170, 193, 316-317 *Hands-On Geometry* 6, 169 *Investigation* 10-11 **Teacher Wraparound Edition:** EC 9; ICE 5		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
c.	Prove a statement false by using a counterexample.	**Student Edition:** 4-9		
Objective 1.2: Analyze characteristics and properties of angles.				
a.	Use accepted geometric notation for lines, segments, rays, angles, similarity, and congruence.	**Student Edition:** 12-17, 62-67, 90-94, 104-109, 110-114, 122-127, 162-167, 203-207, 316-321, 356-361, 362-367 *Hands-On Geometry* 19 **Teacher Wraparound Edition:** FA 16; ICE 13; OEA 17		
b.	Identify and determine relationships in adjacent, complementary, supplementary, or vertical angles and linear pairs.	**Student Edition:** 110-114, 116-121, 122-127, 128-133, 148-153, 156-161 *Graphing Calculator Exploration* 112 **Teacher Wraparound Edition:** EC 121, 126; OCE 111; RA 112, 158		
c.	Classify angle pairs formed by two lines and a transversal.	**Student Edition:** 148-153, 156-161, 162-167 *Hands-On Geometry* 149 **Teacher Wraparound Edition:** EC 161; OEA 153; RA 158		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
d.	Prove relationships in angle pairs.	**Student Edition:** 121 #31, 156-161, 162-167, 644-648, 649-653, 654-659 **Teacher Wraparound Edition:** RA 125, 158		
e.	Prove lines parallel or perpendicular using slope or angle relationships.	**Student Edition:** 162-167, 168-173, 660-665 *Hands-On Geometry* 162		
Objective 1.3: Analyze characteristics and properties of triangles.				
a.	Prove congruency and similarity of triangles using postulates and theorems.	**Student Edition:** 203-207, 210-214, 215-219, 316-321, 323 Ex1, 362-367, 368-373, 644-648, 649-653, 654-659 *Hands-On Geometry* 203, 210, 362 *Investigation* 208-209 **Teacher Wraparound Edition:** EC 207, 214, 219; RA 212, 217		
b.	Prove the Pythagorean Theorem in multiple ways, find missing sides of right triangles using the Pythagorean Theorem, and determine whether a triangle is a right triangle using the converse of the Pythagorean Theorem.	**Student Edition:** 256-261 *Hands-On Geometry* 262 **Teacher Wraparound Edition:** EC 261; MTL 256; TT 257		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
c.	Prove and apply theorems involving isosceles triangles.	**Student Edition:** 246-250, 644-648, 649-653, 654-659, 660-665 *Graphing Calculator Exploration* 246-247 **Teacher Wraparound Edition:** MTL 246		
d.	Apply triangle inequality theorems.	**Student Edition:** 282-287, 290-295, 296-300 *Hands-On Geometry* 283 *Investigation* 288-289 *Graphing Calculator Exploration* 290 *Math in the Workplace* 301 **Teacher Wraparound Edition:** EC 295, 299; FA 297; MTL 290; OEA 295; RA 292, 298		
e.	Identify medians, altitudes, and angle bisectors of a triangle, and the perpendicular bisectors of the sides of a triangle, and justify the concurrency theorems.	**Student Edition:** 228-233, 234-239, 240-243 *Hands-On Geometry* 228, 234-235 *Investigation* 244-245 **Teacher Wraparound Edition:** EC 233, 239, 243; RA 231, 237		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
Objective 1.4: Analyze characteristics and properties of polygons and circles.				
a.	Use examples and counterexamples to classify subsets of quadrilaterals.	**Student Edition:** 310-315, 316-321, 322-326, 327-332, 333-338 *Hands-On Geometry* 322, 328 *Investigation* 340-341 *Graphing Calculator Exploration* 316-317 *Math in the Workplace* 339 **Teacher Wraparound Edition:** EC 315, 321; FA 335; FTC 336; OEA 332; RA 330; T 327		
b.	Prove properties of quadrilaterals using triangle congruence relationships, postulates, and theorems.	**Student Edition:** 323 Ex1, 325 #5 & 13, 326 #14, 329 Ex3, 331 #47 *Hands-On Geometry* 312 *Preparing for Proof* 319		
c.	Derive, justify, and use formulas for the number of diagonals, lines of symmetry, angle measures, perimeter, and area of regular polygons.	**Student Edition:** 310-315, 388-393, 402-407, 408-412, 413-418, 425-430 *Hands-On Geometry* 312, 408, 415, 425 **Teacher Wraparound Edition:** MTL 408, 425; RA 411		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
d.	Define radius, diameter, chord, secant, arc, sector, central angle, inscribed angle, and tangent of a circle, and solve problems using their properties.	**Student Edition:** 454-458, 462-467, 468-473, 474-477 *Hands-On Geometry* 469 *Math in the Workplace* 459 **Teacher Wraparound Edition:** EC 458, 466, 473; RA 465		
e.	Show the relationship between intercepted arcs and inscribed or central angles, and find their measures.	**Student Edition:** 462-467 **Teacher Wraparound Edition:** EC 466; RA 465; MTL 462		
Objective 5: Perform basic geometric constructions, describing and justifying the procedures used.				
a.	Investigate geometric relationships using constructions.	**Student Edition:** *Hands-On Geometry* 65, 99, 107, 130-131, 162, 210, 234-235 *Graphing Calculator Exploration* 112, 170, 193, 246-247, 290, 316-317, 371		
b.	Copy and bisect angles and segments.	**Student Edition:** *Hands-On Geometry* 65, 99, 107		
c.	Construct perpendicular and parallel lines.	**Student Edition:** *Hands-On Geometry* 65, 130-131, 162		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
d.	Justify procedures used to construct geometric figures.	The following references can be used to meet this standard. **Student Edition:** 212-214 *Hands-On Geometry* 65, 99, 107, 130-131, 162, 210, 234-235 *Graphing Calculator Exploration* 112, 170, 193, 246-247, 290, 316-317, 371		
e.	Discover and investigate conjectures about geometric properties using constructions.	**Student Edition:** *Hands-On Geometry* 65, 99, 107, 130-131, 162, 210, 234-235 *Graphing Calculator Exploration* 112, 170, 193, 246-247, 290, 316-317, 371		
Objective 6: Analyze characteristics and properties of three-dimensional figures.				
a.	Identify and classify prisms, pyramids, cylinders and cones based on the shape of their base(s).	**Student Edition:** 496-501 **Teacher Wraparound Edition:** EC 501; FA 499; TT 497		
b.	Identify three-dimensional objects from different perspectives using nets, cross-sections, and two-dimensional views.	**Student Edition:** 496-501 (especially #32) *Investigation* 502-503		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
c.	Describe the symmetries of three-dimensional figures	The following references can be integrated into classroom discussion or activities to meet this standard. **Student Edition:** 434-439, 496-501		
d.	Describe relationships between the faces, edges, and vertices of polyhedra.	**Student Edition:** 501 #33		
STANDARD II: Students will use the language and operations of algebra to explore geometric relationships with coordinate geometry.				
Percentage of coverage in the *student and teacher edition* for Standard II:_____ %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard II: _____%**		
OBJECTIVES & INDICATORS		**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries*** ✓
Objective 2.1: Describe the properties and attributes of lines and line segments using coordinate geometry.				
a.	Verify the classifications of geometric figures using coordinate geometry to find lengths and slopes.	**Student Edition:** 168-173, 262-267, 660-665 **Teacher Wraparound Edition:** ICE 662-663		
b.	Find the distance between two given points and find the coordinates of the midpoint.	**Student Edition:** 76-81, 262-267, 660-665 **Teacher Wraparound Edition:** EC 81; RA 80		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
c.	Write an equation of a line perpendicular or a line parallel to a line through a given point.	**Student Edition:** 174-179 **Teacher Wraparound Edition:** EC 179		
Objective 2.2: Describe spatial relationships using coordinate geometry.				
a.	Graph a circle given the equation in the form, and write the equation when given the graph. 222)()(*rkyhx*=−+−	**Student Edition:** 618-622 *Math in the Workplace* 623 **Teacher Wraparound Edition:** EC 622; RA 620		
b	Determine whether points in a set are collinear.	**Student Edition:** 12-17, 66 #5, 168-173		
STANDARD III: Students will extend concepts of proportion and similarity to trigonometric ratios.				
Percentage of coverage in the *student and teacher edition* for Standard III:_____ %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard III: _____%**		
OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
Objective 3.1: Use triangle relationships to solve problems.				
a.	Solve problems using the properties of special right triangles, e.g., 30°, 60°, 90° or 45°, 45°, 90°.	**Student Edition:** 554-558, 559-563 *Hands-On Geometry* 554, 559 **Teacher Wraparound Edition:** EC 558, 563; RA 562		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
b.	Identify the trigonometric relationships of sine, cosine, and tangent with the appropriate ratio of sides of a right triangle.	**Student Edition:** 564-569, 572-577 *Graphing Calculator Exploration* 574 *Investigation* 570-571 **Teacher Wraparound Edition:** EC 569		
c.	Express trigonometric relationships using exact values and approximations.	Approximations are discussed on the following pages. **Student Edition:** 564-569; 572-577		
Objective 3.2: Use the trigonometric ratios of sine, cosine, and tangent to represent and solve for missing parts of triangles.				
a.	Find the angle measure in degrees when given the trigonometric ratio.	**Student Edition:** 564-569, 572-577 **Teacher Wraparound Edition:** ICE 567, 574		
b.	Find the trigonometric ratio given the angle measure in degrees, using a calculator.	**Student Edition:** 564-569, 572-577 *Investigation* 570-571 **Teacher Wraparound Edition:** ICE 565, 566, 573		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
c.	Find unknown measures of right triangles using sine, cosine, and tangent functions and inverse trigonometric functions.	**Student Edition:** 564-569, 572-577 *Investigation* 570-571 **Teacher Wraparound Edition:** ICE 565, 566, 567, 573, 574		
STANDARD IV: Students will use algebraic, spatial, and logical reasoning to solve measurement problems.				
Percentage of coverage in the *student and teacher edition* for Standard IV:_____ %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard IV: _____%**		
OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
Objective 4.1: Find measurements of plane and solid figures.				
a.	Find linear and angle measures in real-world situations using appropriate tools or technology.	**Student Edition:** 56-61, 96-101 *Hands-On Geometry* 149, 169, 283 **Teacher Wraparound Edition:** FA 60; IS 58, 97; OEA 61		
b.	Develop surface area and volume formulas for polyhedra, cones, and cylinders.	**Student Edition:** 510-515, 516-521, 522-527 *Hands-On Geometry* 510, 522		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
c.	Determine perimeter, area, surface area, lateral area, and volume for prisms, cylinders, pyramids, cones, and spheres when given the formulas.	**Student Edition:** 35-40, 413-418, 419-424, 425-430, 504-509, 510-515, 516-521, 522-527, 528-533, 534-539 *Graphing Calculator Exploration* 506 *Hands-On Geometry* 415, 420, 425, 522 **Teacher Wraparound Edition:** RA 427		
d.	Calculate or estimate the area of an irregular region.	**Student Edition:** 413-418 *Hands-On Geometry* 415 **Teacher Wraparound Edition:** OEA 418		
e.	Find the length of an arc and the area of a sector when given the angle measure and radius.	**Student Edition:** 482 #27; 483-487		
Objective 4.2: Solve real-world problems using visualization and spatial reasoning.				
a.	Solve problems using the Pythagorean Theorem and its converse.	**Student Edition:** 256-261 *Hands-On Geometry* 262 **Teacher Wraparound Edition:** EC 261; MTL 256; TT 257		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
b.	Solve problems using the distance formula.	**Student Edition:** 262-266, 660-665 *Hands-On Geometry* 262, 660 **Teacher Wraparound Edition:** EC 267; OEA 267; RA 265		
c.	Solve problems involving trigonometric ratios.	**Student Edition:** 564-569, 572-577 *Graphing Calculator Exploration* 574 *Investigation* 570-571 **Teacher Wraparound Edition:** EC 569, 577; ICE 565, 566, 567, 573, 574		
d.	Solve problems involving geometric probability.	**Student Edition:** 483-487 **Teacher Wraparound Edition:** ICE 484; OEA 487; RA 486		